

Agricultural Resources Available to Women of Arusha, Tanzania

A Senior Project

presented to

the Faculty of the Agribusiness

California Polytechnic State University, San Luis Obispo

In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science

by

Travis Barnett

June, 2010

TABLE OF CONTENTS

Chapter

I.	INTRODUCTION	2
	Statement of the Problem	4
	Hypothesis	4
	Objectives of the Study	4
	Significance of the Study	4
II.	REVIEW OF LITERATURE	6
III.	METHODOLOGY	12
	Procedures for Data Collection	12
	Procedures for Data Analysis	14
	Assumptions and Limitations	15
IV.	DEVELOPMENT OF THE STUDY	17
	Agricultural Resources Through Production and Selling	18
	Products Grown in Each District and Primary Market Days	19
	Women Without Access to Land	22
	Financial Resources	24
	Agricultural Education Resources Available to Women	31
	FSR Resources Available to Women of Arusha	36
	Pictures	39
V.	SUMMARY AND CONCLUSIONS	40
	Summary	40
	Conclusion	41
	Recommendations	42
	Further Research	42
	References Cited	44

Chapter 1

INTRODUCTION

Africa is home to the largest HIV epidemic the world has ever known. Although all 54 countries that make up Africa have felt the ill effects of the deadly virus, the Sub-Saharan region is the center of the pandemic. The Sub-Saharan also known as “Black Africa” contained an estimated total of 22 million HIV infected people in 2007 (“The 2008 Report on the Global AIDS Epidemic” 2008). Although the western portion of the Sub-Saharan area has seemed to stabilize to an extent, with an infection rate of less than 2 percent in most western and central countries, the east continues to fluctuate dramatically from country to country. In 2006 seven east central African countries, including Cameroon, the Central African Republic, Gabon, Malawi, Mozambique, Uganda, and Tanzania had a 5 percent or greater infection rate.

Tanzania, located along the eastern coastline of Africa, has a particularly disturbing number of HIV infected people. According to the Tanzania Commission for AIDS in 2008 an estimated 7 percent of Tanzania’s sexually active population had the HIV virus (Current Status of HIV and AIDS 2009). Women make up a greater proportion of the HIV positive population than that of the males. The abundance of women with AIDS causes a number of negative effects to trickle down into various sectors of society. As a result of women being the primary caretakers of their children, tens of thousands of children are orphaned each year as a direct

result of AIDS related deaths. In Tanzania the acquiring of AIDS does not eradicate women's obligations to provide for themselves or their young.

Heavily populated cities often have twice the level of HIV positive individuals of rural regions. This has to do with more densely populated areas increasing the chances for human interaction and social networking, which result in behavior that causes AIDS to be spread rapidly. Arusha, a Tanzanian city containing over 341,000 people, is one of Tanzania's largest cities ("The 2008 Report on the Global AIDS Epidemic" 2008). A high HIV rate, mixed with such a large population has resulted in Arusha being dramatically affected by this deadly virus. One of the major drivers of Arusha's AIDS epidemic is that women do not have a means to provide for themselves economically and as a result are expected to get married and have kids at all costs (Esu-Williams, 2000). This creates a situation where the women of Arusha are pressured into to being sexually active in a high risk area. Whether the woman has AIDS or is desperately trying to avoid the devastating virus a having a livelihood is vital.

Agriculture produces work for 85% of Tanzania's population and has helped thousands of women find a way to produce the fundamental nutritional necessities for life (Delgado and Minot, 2000). For women with AIDS, that are still healthy enough to work, simple agriculture or local food production is one of the only ways of obtaining food, other than begging. Women without AIDS depend on agriculture to live more self reliant lives, decreasing the pressure to become sexually active in a high risk area. The less a woman has to rely on a male counterpoint for survival the less likely she will acquire the AIDS virus (Zhihong and Larsen, 2008).

Problem Statement

What localized agricultural resources are available in Arusha, Tanzania for women to utilize as a means of producing for themselves and their dependents?

Hypothesis

There will be agricultural, educational and financial resources available for the majority of women who have the ability to seek out assistance, regardless of their circumstances.

Objectives

- 1) To assess what small scale agricultural based education programs are available for women in Arusha.
- 2) To assess the locally available food production resources and markets that can be utilized by the women of Arusha.
- 3) To assess what agriculturally related opportunities and organizations are available for woman to assist them in using agriculture as a means of a livelihood.

Significance of Study

Lack of education and understanding by African society has led to women being stigmatized and blamed for many of the unfortunate circumstances that occur. Huge responsibilities remain with women to care for their families, yet the majority of these women lack the sufficient skills and resources necessary to fulfill what society expects of them (Zhihong and Larsen, 2008). The HIV epidemic has only added to women's desperation for a means of production. Women are disproportionately infected with HIV compared to men, due to their inferior role in society. Females make up 60 percent of the total infected population in Tanzania, as a result of males dominant role over women in African society. The helpless state of women not only affects them, but also their dependents. Women acquiring AIDS, is the

single leading factor contributing to the number of children orphaned in Africa. In 2007 an estimated 1.1 million children were orphaned in Tanzania as a result of AIDS and the inability of African women to provide for their young ("Arusha Project" 2007).

Agriculture production in its most fundamental form is paramount for the survival of the majority those who inhabit the country of Tanzania. As a result of a large portion of the country living below the poverty line, local agriculture is vital for feeding the population. Much of the population lives on a very low income and relies heavily on local production for their food supply. African women play a huge role in agriculture, as they are expected to bear the all of the production and harvest work. An understanding of resources that are available to women in various circumstances is crucial in creating an awareness that will help promote women to take advantage of helpful resources that are supplied locally.

Chapter 2

REVIEW OF LITERATURE

Local and self sufficient agriculture is a major source of food supply for millions of people living in undeveloped and developing countries. Certain aspects of agriculture's role in developing countries are universal and a major determinant of the country's overall welfare and progress (Johnston and Mellor, 1981). As a result of agriculture's primary function in the development of a country, countless studies have been conducted in an attempt to understand farming systems and production processes throughout the world. Familiarity with the abundance of studies done and techniques developed and utilized over the last century allows for a better understanding of research approaches that have proven very useful, as well as research techniques that are flawed or ineffective. Method of research is crucial to obtaining representative and accurate data. The better methods are always the "appropriate methods" that are relevant to the local resources and skills (Bruce, 1994,p4).

Having correct research tactics is vital for acquiring accurate data and accomplishing the ultimate goals of the study (Collinsin, 1999). Collinson, a researcher out of The University of Florida, writes about the importance of proper research techniques. The hardships that he faced in the central and Northern provinces of Zambia are an example of why prior and proper research has always been vital, in order to achieve the desired results. His mission was to develop technologies and services to aid small scale farmers in areas of high male outmigration. Prior to travelling to Zambia he made detailed plans of what he expected to accomplish and

how he was going to fulfill his objectives. Once he arrived in Zambia his original tactics of improving technology for production for these small scale farmers was useless, as a result of his lack of prior research and understanding of available resources.

Collinsons' (1999) lack of understanding resulted in him being unable to put his original plans into action. However, his lack of preparation forced him to think about how important prior research is to successfully implement new innovations into a society. Especially important for agricultural innovation in developing countries and of growing interest at the time was farming production research. As discovered many years prior to Collinson's time, his failure in Zambia is an example of why proper understanding of the local farm system is important to achieve reliable information that is based on farm systems in their natural state and makes it possible to formulate a plan that is tailored to the specific area and the objective trying to be accomplished.

Three innovative approaches to agricultural research were focused on throughout the 1970s and 1980s and are now considered crucial for the progress of agriculture in developing countries. The University of Florida established a team of researchers, including Collinson, that focused on further development of three approaches to research, including farm systems research perspectives (FSR), gender analysis, and participatory methods. Over the last thirty years these perspectives and techniques have been strengthened by others in the field and are currently clearly established approaches within the agricultural research community.

FSR is a research approach that surfaced in the late 1970s, as there was an increased interest in small plot farming. As more research was focused on agriculture in developing countries, an understanding of small scale farming became crucial. The FSR perspective

recognizes the role that small plot farming plays in developing countries and includes processes including analysis of farming systems, technology development and testing, and verification of research results carried out by research teams. Before the FSR perspective most research was conducted on commercial farming, overlooking the vital role of small plot farming in developing countries. FSR recognizes the significance of small scale farming systems and the need for research methods that are designed to account for variables associated with small plot farming. Since its development, FSR has been adopted as a fundamental concept to understanding agricultural production in developing countries (Harwood 1979).

Gender analysis is another variable that has not always been recognized as being distinct for research. There was a time when words like women and gender were foreign in the agricultural research community. Women were considered invisible workers even though they contributed to production more than men in many societies (Dixon, 1982). However, since the 1950s it has been accepted that women's roles in agriculture are necessary to document, in order to accurately assess and understand a country's farming system. Women's views and roles in the production of food are now recognized as being just as important as males. Understanding the significance of gender while analyzing agriculture in undeveloped countries results in a better and more accurate description of the farm system and opens doors to a better understanding of possibilities in technical innovation (Feldstein and Jiggins, 1994). Prior to gender being incorporated into farm research, data collected was incomplete and incapable of depicting an accurate account of the system in its entirety. Women have been involved in the farm process since the beginning of organized agriculture and yet up until the early 1980's men have been the main focus of research and development. Understanding gender

differences is important in helping science develop improved technologies that meet the needs of farm systems in developing countries.

“Participatory observation” is a research technique that has been utilized for centuries but cannot easily be presented as a series of mechanical steps to be universally used (Jorgenson, 1989). Many accomplished practitioners of participant observation studies consider the method more of an art form than a concrete method. Participatory observation is more closely linked with characteristics of human existence, rather than a physical science. This method is considered a humanistic methodology concerned with human affairs, welfare and nature and is usually regarded as an inappropriate means of creating any type of linear or mechanical presentation. Although participatory observation cannot be utilized for formulating scientific theory it is useful for testing a hypothesis, testing existing information, and obtaining accurate accounts and comparisons of variables in their natural state.

Participant observation cannot be defined in a systematic manner; however, the method is recognized as consisting of seven basic features. The first feature includes an interest in human interaction and meaning within a specific setting. The second feature suggests that the main objective being researched is concerned with everyday life situations and settings of a specific location. Participant observation stresses interpretation and understanding of human existence as well as a logic that is open to adaptation and the continual redefining of what is problematic based on the constant inflow of newly acquired facts. Participant observation is designed qualitatively with an emphasis on maintaining relationships with locals and participants in the field. Finally, participant observation greatly relies upon direct observation as a method for gathering data (Jorgenson 1989).

Tanzania, like most developing countries, relies heavily on agriculture. Agriculture in Tanzania is responsible for the employment of eighty five percent of the entire country's population. Over seventy five percent of the population lives in rural, agriculturally predominant areas of the country. Agriculture and productivity is the primary determinant of the progress that can be achieved in improving poverty conditions and the accessibility for people to obtain commodities that fulfill their fundamental nutritional necessities to live. Poverty in Tanzania is magnified in rural areas thus making its rural inhabitants tremendously reliant on the agricultural sector for survival. As a result of agriculture's dominant role in Tanzanian society much of the research conducted in the country includes factors dealing with or related to farm systems and food production (Delgado and Minot 2000).

The African Medical and Research Foundation (Arusha) conducted a case study in rural Tanzania that included a link between agriculture and the chances of acquiring HIV (Quigley, et al. 1996). The objective of the study was to examine the association between HIV infection and patterns of sexual behavior and other risk factors. The study consisted of surveying 1000 Tanzanians, first about whether they were HIV positive and secondly about social status and behaviors. The study concluded that a significantly higher HIV prevalence was found in men and women that were not involved in agriculture.

Another case study conducted in West Usambaras, Tanzania attempted to observe the various sources of income that married women had and the overall quality of their lives. The first thing that researchers clearly observed was that the majority of all manual agricultural labor was done by women at the demand of their husbands (Sender and Smith, 2007).

Discussions with women suggest that all income resulting from tea and coffee sales goes directly to the men. Money earned from selling food in local markets is split with the spouse, regardless of the male's involvement. Women without access to land are not able to obtain any cash for their households through the selling of foods in the local markets. These women did not have their own means of production and must try and find a source of income through full time wage employment. The study presents the idea that women that have to work full time for a wage, are forced to work much harder than those confined to household work and small plot farming. However, the study concludes that although household work may not be as rigorous, the women find themselves more reliant and left stuck, under control of the male (Sender and Smith, 2007).

Wage employment on the other hand, whether on a commercial estate or a smallholder's farm, offers women an escape route if necessary. Several of the women interviewed in the study were able to leave their abusive husbands as a result of agricultural wage work. The women of this area were able to accumulate more income that they themselves could keep because they were employed rather than having to take on household labor. Being employed creates the possibility for women to work enough to generate enough money to take their children and leave whatever potentially bad situation that they find themselves in with their husband. The case study shows that sometimes independent, small plot farming may not be the best solution for married women, living with abusive or violent husbands (Sender and Smith, 2007).

Chapter 3

METHODOLOGY

Procedures for Data Collection

As a result of the need for basic family food production, various agricultural resources have sprung up in large Tanzanian cities, like Arusha. Arusha is a representative city dealing with AIDS in Tanzania because it is considered a mainland city that has an AIDS rate and population consistent with the top six largest cities in Tanzania, disregarding the port city of Dar es Salaam. Research conducted exposed what agricultural or food education programs are available, as well as what physical agriculturally related resources can be utilized by women living in Arusha. In order to obtain knowledge and understanding of what human capital and physical resources in food production were available, a few different procedures for data collection were taken.

Primary data collection, through observation, was heavily relied on for obtaining information. Data was collected in Arusha, from June 17th, 2009 to August 20th 2009. The local area resources were observed firsthand. Along with observing the relevant surroundings, working with the NGO “Women, Agriculture Development and Environmental Conservation” (WADEC) allowed for an inside look at a NGO in Arusha that is agriculturally based and focused on helping women. ¹

¹ Helen Bradburn the founder and Executive Coordinator of WADEC, was an important resource for this study. Not only was she used for gaining understanding about WADEC and other similar NGO’s, but Helen is a Tanzanian born woman, that is very knowledgeable about African culture, as well as resources available to women within the Arusha region. Ms. Bradburn was used as an interpreter when gathering information from local women throughout the community or talking with women participating in WADEC’s micro-finance program.

Working with the Selian Agriculture Research Institute (SARI), the FSR headquarters for Arusha, revealed resources available to women through farm systems research organizations. Unstructured interviews with SARI personnel, Charles J. Lyamchai and Tueli E. Mmbaga, were conducted between August 12, 2009 and August 15, 2009, in order to gain insight about resources the institution offers women. Lyamchai and Mmbaga are both researchers at SARI. They had a thorough understanding of the institution and the programs and resources it provides. A total of three days were spent with Lyamchai and Mmbaga accompanying researchers, reading SARI manuals and documenting relevant local information. Information was sought about specific resources supplied by SARI that cater to women who own land, don't own land, have starting capital, lack starting capital and are infected with the HIV virus or not HIV positive.

Beyond WADEC and SARI's farm systems research headquarters, other information was gathered while working with The Arusha Project. Nick Hutchinson, the founder of The Arusha Project and heavily involved in micro-financing in Arusha over the past five years, was interviewed to gain further understanding of the micro-finance industry and the various organizations functioning within Arusha. Other employees of The Arusha Project were also used in acquiring data about women with various land, income and health circumstances. An employee named Chahe was used as a driver to get to locations where parts of this study were conducted. An interpreter named Joseph Mmbogi, a student of Tanzania University was used

as an interpreter when it was necessary to inquire local farmers about specifics concerning crops.

The information obtained from the unstructured interviews and the observation study was interpreted in a manner that focuses on the female gender. All information gathered from participating in The Arusha Project program, WADEC and SARI, as well as the data obtained through independent observation was sorted according to its relevancy to the objective at hand.

Procedures for Data Analysis

Observed crops were documented according to the district grown. Agricultural opportunities for women were dependent on the women's individual circumstances, thus the data collected was analyzed according to a woman's potential to utilize a potential source of assistance, given her specific social and economic circumstance. First women owning or having access to a land resource was compiled in a way that summarized the processes and potential ways in which the woman could use the land to make a profit. Summaries include potential opportunities to create a livelihood using the available land. Steps taken to analyze potential resources for women with land include taking into consideration potential resources, that require land availability and analyzing the potential for the woman to use her land.

Next the data gathered that pertained to women without access to land was compiled through analyzing potential resources available to women who do not have access to land for planting. Data collected was also analyzed in order to document options available for women who do not have the starting capital to engage in small business. Furthermore, all the data

collected that related to agricultural technical knowledge available to the women of Arusha, focused on the business and production training programs that can be used by women who desire to educate themselves about the relevant subjects. Finally, FSR, resources were compiled and analyzed according to the resources offered by SARI, the FSR head quarters for Arusha.

All of the data collected about resources available to women with various health issues, land availability and income and starting capital circumstances was compiled and looked at in its entirety in order to make conclusions about the major hindrances that women face, despite the number of agricultural resources available to them. All of the data was analyzed subjectively in a manner that connects the social and economic circumstances of Arusha, Tanzania, with reasons why the abundance of resources available to women, fail to pull the Arusha region from its poor economic state. Conclusions made about social and economic hindrances were drawn subjectively as a result of supporting data accumulated from working with various institutions, as well as simple observations accumulated between the period of June 2009 and August 2010.

Assumptions

This study assumes consistency of structure throughout the entire region of Arusha. It is assumed that the NGO WADEC, provided insight on how all NGO's with similar motives, connections and resources work to aid women in Arusha. It is also assumed that if a behavior or practice is observed consistently and ubiquitously for at least two weeks, the practice or behavior is part of the culture and not a paranormal phenomenon. The information gathered through unstructured interviews will be assumed to be accurate and correct. Although the

interpreters used for this study are not professional or certified it is assumed that their interpretations during interviews are accurate and honest.

Limitations

Arusha is a city that spans over thousands of hectares and it is impossible to thoroughly research the exact agricultural resources available for women in the entire region, given the allocated time of just over two months for research. All of the interviews conducted in this study were informal and unstructured due to the lack of ability to foresee who would be contacted and able to help with relevant knowledge for this study. Many of the observations documented are limited to what can be seen from roads or walk ways and cannot be deemed accurate for the Arusha region in its entirety. The conclusions made about the hindrances that keep the majority of women from being very successful are subjective and are only drawn with support of the documented data and cannot be proven by the data collected in this study alone. As with most participant observational studies, the data gathered is only relevant for the specific contacts made during this study and the results are limited to the experiences accumulated in this study alone.

Chapter 4

DEVELOPMENT OF THE STUDY

The Arusha region begins at the base of Mount Meru and stretches east to Ngorongoro crater. There are a total of six districts that make up the Arusha region. These districts are the Arusha district, Arumeru district, Monduli district, Karatu district, Longido district, and Ngorongoro district. All six districts will be considered relevant to this study and although the crops produced in each district differ it will be assumed that agriculture resources available to women remain similar throughout each district.

What agricultural resources are available for women to utilize is determined by a number of deciding factors that are all relevant in dictating what agricultural opportunities an individual has. Some important factors that play a large role in a woman's opportunities are socio economic condition, land availability, health, number of children, spouse and spouse's dominant behavior over the women, location, inheritance, friends and family networking and education. More specifically, factors that were looked at in this study include the woman's ability to have access to land, the amount of starting capital a woman has and availability to local markets. What agriculturally related opportunities a woman has or their potential for success is entirely limited to each individual's circumstances.

Agricultural Resources Through Production and Selling

Land ownership is a major determinant of what agricultural opportunities women have to utilize (see Figure 1 Small Plot Farm Page 38). There are a few different ways for woman in Arusha to acquire land. The first and most common is for the woman to marry a man who has either purchased or inherited a small piece of land. Another way for a woman to gain land is if she herself inherits a small piece from her parents. However, with increases in population and rivalry among siblings and with males given preference, it is uncommon for women to acquire any land from family. Lastly, a woman could potentially purchase the land herself; however, the chances of a poor woman finding herself with enough money to buy a piece of land fit for planting is very slim.

The most common way for women to acquire land for producing is by renting. The availability and cost of renting land is determined by the size, location and quality of the land. It is much more difficult and expensive to find a plot of land suitable for planting than it is to find a piece of land to live on. Finding a piece of land that has the potential for producing crops for planting according to Ms. Bradburn, Wadec director, can cost in the upwards of Tnz60,000-120,000/hectare Tanzanian Shillings per month, which is equivalent to \$40-\$90 USD. Considering that the Tanzanian GDP is just over 300 dollars per person per year it is easy to see that renting a piece of land suitable for growing is not possible for most women.

Although land ownership or even use of land by women is rare there are some instances, like the ones previously mentioned, that women manage to gain access to land for planting. Woman fortunate enough to have access to land have a few different options

depending on their circumstances. If the land is fertile and has enough water to produce a considerable crop the woman may have the option of taking her harvest and selling it at wholesale value to a middleman who in turn sells the produce in the local market or to another woman to sell. In this instance the woman would only be responsible for producing a harvest and would avoid the long, strenuous days in the market.

Woman who must pay for the use of their land usually cannot afford to sell their produce at wholesale value. Instead, these women would be both the producers and sellers of their goods. Woman in the Arusha region are responsible for the majority of the work load involved in farming and it is not uncommon for women who both harvest and sell, to work seven days a week and an upwards of fourteen hours a day. Many women choose or are forced to take on such a rigorous and lengthy work as they need more revenue by producing and selling their produce at a price above local wholesale value. Often women in Arusha have an upwards of eight plus children and taking on multiple tasks is the only way to provide for all of their children. A woman with access to land can chose to produce a variety of crops that are suitable for growing in her area.

Products Grown in each District and Primary Market Days

Although food production varies widely within the Arusha region, each of the six districts has specific commodities grown within that district (See Table 1 below). How much of each commodity or its availability year around is determined by a number of factors such as climate, farming techniques, ability to fertilize etc. It is also important to remember that just because a district has a specific commodity does not mean that there is enough produced within the district to sustain the districts demand. Data concerning specific commodities grown

in each district was collected through a process of visiting each individual district, observing what was grown there and recording the observations. An interpreter named Joseph Mmbogi a student of Tanzania University was used when it was necessary to inquire a local farmer about specifics concerning what he or she was growing.

<u>Table 1 . Crops Grown in Each District and Primary Market Days and Location</u>			
<u>District</u>	<u>Crops</u>	<u>Market Day</u>	<u>Market Location</u>
Arusha	coffee, bananas, legumes, tomatoes, egg plant, okra, onions,	Everyday	Arusha City
	carrots, beat roots, cucumber, peas, cailiflower, sunflower,		
	cassava, sweet potatoes, Irish tomatoes, millet, watermenlon		
Arumeru	coffee, bananas, legumes, tomatoes, egg plant, okra, onions,	Wed, Sat	Tangaru Village
	carrots, beat roots, cucumber, peas, cailiflower, sunflower,		
	cassava, sweet potatoes, Irish tomatoes, millet, watermenlon		
Mandali	rice, bananas, legumes, sunflowers	none	None
Karatu	wheat, barley, maize, legumes, sunflower, millet	Everyday	Motowamba Village
Longido	wheat, barley, maize, legumes, sunflower, millet	Everyday	Ngaramtoni Village
Ngorongoro	coffee, bananas, legumes, tomatoes, egg plant, okra, onions,	Everyday	Ngorongoro
	carrots, beat roots, cucumber, peas, cailiflower, sunflower,		
	cassava, sweet potatoes, Irish potatoes, millet, watermenlon		

The Arusha district is responsible for growing more commodities year around than any other district in Arusha. Being located at the base of Mount Meru allows for continuous year round water. The largest market in the Arusha region is located in Arusha City and is open everyday at discounted prices. Maize is the most widely grown commodity in the Arusha

district. Other commodities grown in the Arusha district include coffee, bananas, legumes, tomatoes, egg plant, okra, onions, carrots, beat roots, cucumber, peas, cauliflower, sunflower, cassava, sweet potatoes, Irish potatoes, millet, and watermelon.

Arumeru district is located just to the west of the Arusha district and as a result of being in close proximity to Mount Meru it has very similar conditions as the Arusha district. The soil is noticeably dark, almost black and is high in organic matter. Similar to Arusha district, commodities grown within the Arumeru district include maize, coffee, bananas, legumes, tomatoes, egg plant, okra, onions, carrots, beat roots, cucumber, peas, cauliflower, sunflower, cassava, sweet potatoes, Irish potatoes, millet, and watermelon. The largest market in Arumeru is located in Tangaru village and is held on Wednesdays and Saturdays.

Mandali district is dry with a desert climate. Rainfall is minimal with less than 100mm of rain per year according to Bradburn. The majority of the people that inhabit the Mandali district are the Masai tribes that are traditional nomadic herds people. The Masai follow the water and grass and practice open range herding. It was apparent that plant crop production is nearly impossible in the Mandali, with the exception of areas in close proximity of rivers or small canals. The Masai women of Mandali did manage to grow some rice, bananas, and a few vegetables that were not recognizable and was not anyone around to get any details from. A few of the women were questioned with the help of the interpreter and they mentioned that milk was the biggest commodity in the Mandali district. As a result of all the men owning cattle there was an opportunity for woman to obtain milk to sell in districts surrounding Mandali. The local woman said that in years of heavy rain corn, legumes and sun flowers can be grown there. However, as a result of the Mandali district being scattered over a large area of desert it lacks a

central market. However, women were observed selling milk and other goods on the side of the dirt roads.

The Karatu and Longido districts are too similar to notice any differences by observation. Both districts appeared to have very dark volcanic soils. Although the soils appeared to have high organic material it was too dry for efficient growing conditions. The only crops that appeared to be produced on a small scale were wheat, barley, maize, legumes, sunflower and millet. Ms. Bradburn said that the central market of Karatu was held everyday in the village of Mtowamba. The central market of Longido is held everyday in Ngaramtoni village.

Ngorongoro, which includes the famous Ngorongoro crater has a wide variety of produce that consists of similar produce as the Arusha district. The observed produce growing around the crater include coffee, bananas, legumes, tomatoes, egg plant, okra, onions, carrots, beat roots, cucumber, peas, cauliflower, sunflower, cassava, sweet potatoes, Irish potatoes, millet, and watermelon. Corn is the dominant crop produced as it appeared to cover the majority of the surface. However, because most of the crops depend solely on surface water and rain and as Tanzania is currently experiencing a three year drought most of the crops were withered and brown. If women were able to obtain food items to sell they could sell it in the Ngorongoro market that is held everyday.

Women Without Access to Land

The majority of women in the Arusha region do not have the means to produce their own food crops for sale. In this case the woman relies on buying food in bulk at wholesale value from a middle man or from the Arusha market. There is a potential for profit in buying in bulk because of the highly varying soil conditions and water availability, which create local food

scarcity throughout areas of the Arusha region. The entire region of Arusha is not suitable for growing year around. Only the areas surrounding Mount Meru and a few other small areas that have available water runoff that allows for year around production. Other areas of Arusha are only suitable for growing when there is sufficient rainfall, which is highly unpredictable. Still, other areas have soils that have been depleted of all of its nutrients to such a degree that these areas cannot sustain any crops, even with available water. As a result of a considerable amount of the Arusha area lacking the resources necessary to grow much food it is absolutely paramount that food from high yielding areas makes its way to areas of low production. The highly varying geographic factors within the Arusha region create an opportunity for women who do not have a means of producing, to become transporters of goods. If a woman has enough starting capital to buy food in bulk from areas of high production and can commute with the produce to villages that lack food, she has added value to the product and can therefore turn a profit in an area of high demand(See Market Figure 4 Page 38).

One way a woman may buy produce is through a middleman who buys or produces large quantities of goods and sells the produce at a wholesale price. Sometimes the wholesaler will deliver the goods to the woman but often times the woman must pick up the produce from a central location in town or at the wholesaler's village. After the woman receives the produce she will bring the commodity back to her village and sell the fruits and vegetables at a higher price than she paid.

If the woman does not know a middleman or it is not convenient for her to use a wholesaler, then she may make a trip into Arusha City and pick up goods in bulk at the wholesale market. Arusha City has the biggest wholesale market within the entire Arusha

region. Most women do not have their own transportation and are limited to the amount they can buy, by how much they can fit on the public “dola dola” (public transportation system). Dola dola vans have a colored stripe down the side , which indicates the route travelled. It is not out of the ordinary for a woman to have two or three huge bags of corn or potatoes or even five or six live chickens shoved into a dola dola that sometimes has twenty-five plus people, in a vehicle designed to comfortably carry fifteen. Once the woman gets the produce back to her village she will spend on average around six to eight hours a day sitting on the side of the road selling her goods. After using an interpreter to ask a few random women from each district, how much each woman makes on each sell it appeared that profits ranged from 50-100 Tanzanian Shillings per unit sold. This is equivalent to 4-8 US cents using the exchange rate as of July 25, 2009. The woman interviewed in this study made approximately \$1.50 equivalent USD per day.

Financial Resources

An unstructured interview with Nick Hutchinson (The Arusha Project, Arusha) was conducted on July 17, 2009 in order to gain insight about women’s financial opportunities. He is the founder of the NGO, The Arusha Project, which has an entire sector devoted towards micro finance. Over the past six years Hutchinson has familiarized himself with the loan industry and has been very successful in creating a revolving fund specifically directed toward helping the women of Arusha. Hutchinson works in close conjunction and is very familiar with other banks and loan agencies within the area.

Hutchinson emphasized how crucial microloans were for many women caught in a poverty trap. Lacking capital necessary to start any sort of business that generates an income

or profit, women are trapped, unable to purchase goods for selling or establish an income stream. Microloans become the only hope for women too poor to generate a cash flow. Hutchinson believes that as investors continue to recognize the quick profit that can be accumulated through the funding of micro loans the industry will continue to grow, giving more women opportunities to escape their current conditions. Although there are those that invest in micro loans for philanthropic reasons, Hutchison said that in order to raise the number of investors one has to focus mostly on the profit that can be accumulated.

Hutchinson stated that although there are numerous microloan organizations in Arusha, there are five large microfinance institutions that handle the bulk of loans given for Arusha women. The five include Saccos which is a microfinance firm that is sponsored directly by the Tanzanian government. An NGO named Pride has a large microloan sector. BRAC is another NGO that focuses on micro loans. BRAC operates in Arusha and Dar es Salaam and is projected to expand to be the world's largest NGO in the next few years. The National Microfinance Bank (NMD) and Small Enterprise Development are two other large micro firms located in Arusha. Although the five organizations mentioned above are the largest microfinance institutions, they are often harder to get approval terms and require more starting capital to put against a loan than smaller grass root firms and NGO's. Other smaller firms are able to give individual women personal attention, which improves the women's odds of being successful. "Grass roots" organizations were the primary interest of this study as they are relied on by women who are unable to get approved by bigger institutions.

The majority of grass roots microloan NGOs all have very similar procedures and systems when it comes to micro financing. Due to limited time only one representative NGO

with a microloan sector could be studied. To get a better understanding of how a microloan agency works and how it can be utilized by a woman in Arusha, an in-depth study WADEC was conducted. Again Ms. Bradburn, the founder and director of WADEC, agreed to make her organization completely transparent and revealed their common procedures and methods for the microloan's sector. Along with talking with Bradburn, there was an opportunity to assist in writing a grant proposal for her and as a result became very familiar with the organization through reading a number of manuals and past financial statements.

The first and most important priority for an organization like WADEC is funding sources. Without initial funding or startup capital, a revolving credit fund is not possible. Many NGOs rely solely on aid or grant money for funding. Bradburn grew up in a very poor family in Arusha, but was able to receive an education in conservation agriculture through a foreign sponsorship. She used her education to start WADEC. She received fifteen thousand dollars in aid from Australia. She also was fortunate to receive another eight thousand dollars as a result of a grant from Canada. With the money she received she was able to start up various sectors in conservation agriculture, as well as a revolving micro credit fund in Arusha. It is considered a revolving fund because the money that gets paid back by the women goes directly back into the loan budget, thus a constant in flow of cash available for future loans.

WADEC like most microfinance organizations, only loan to women, rather than men. This is not only because women need the loans more than men, but also because women are much more likely to pay the loans back. When asked why women are more likely to pay back loans than men, Bradburn responded that "women do most of the labor and therefore the loan money is used for business which hopefully produces a profit that can be used as repayment."

Men on the other hand do not have as many responsibilities in African culture and are not as involved in working, at least at the small scale production or selling level and thus they are more inclined to waste the money on alcohol, without any intentions of repayment.

Women that want to apply for a loan go to organizations like WADEC and can usually begin the application process immediately. Although not all organization charge an application fee, WADEC charges a 5000 Tanzanian Shilling fee which is equivalent to roughly four United States dollars. Helen charges an application fee to ensure that the women are serious about applying for a loan. She said that the fee is not for WADEC's benefit but rather it instills a sense of entrepreneurship in the woman and encourages them to follow through with the entire process, because they have something invested in the program.

After the woman comes up with the application fee it is time to start filling out paper work. WADEC does not require any physical capital from the women, to serve as collateral on the loan. The fact the WADEC does not require collateral is very important as many women that apply for loans from organizations like WADEC lack money. However, the women are required to fill out paperwork that states their name, which village they are from, family contacts, the name of the head Chief of their village, history, as well as a brief description of their plan for using the money.

Once all of the paper work is filed, WADEC does a background check that is conducted by Bradburn and Theresia Mollel, the field officer for WADEC. The background check consists of meeting with the Chief of the village that each individual woman lives. Tanzanian villages have a council that acts as a local government that deals with issues that arise within the village. The Chief is the head of the council and acts on the behalf the village that he resides over. It is very

important that the Chief is familiar with all of the people within the village and is an active member of the community, so that if an issue arises he knows about it and can act accordingly. Talking with the Chief of a woman's village can give WADEC insight to a woman's character traits, such as work ethic, integrity, and drive. The Chief would be able to inform WADEC about any past issues or problems with the woman, as well as the woman's positive qualities. After talking to the village Chief, WADEC also talks to the woman's neighbors to gain more of an understanding of the woman's reliability.

If everything in the background check is okay, the woman will be interviewed about her intentions for the loan money and questioned about why she would benefit from the loan as well as why she believes she will be successful. The interviews are informal and conducted in a casual manner to avoid intimidating or discomforting the women. The point of the interview is to determine if the woman has a specific plan for the loan money. WADEC understands that a woman with a business plan has a lot better chance of being successful than a woman who is unsure how she is going to use the money. Three women were interviewed in this study to give a broad overview of some of the women applying for micro loans. The women interviewed for this study are from the Oltulelei ward. The three women's names are Feli, Esther, and Safi. The following information summarizes the informal interviews that were interpreted by Bradburn and conducted on July 21, 2009.

Feli is thirty-three years old and is the mother of four children. Her husband was recently killed by thieves who beat him to death for less than ten dollars worth of Tanzanian Shillings. Now she is left alone to care for her four children and somehow make a living. Feli looked very tired in the interview, but it was amazing how unemotional she was, given her

tough circumstances. It was obvious that she had no intention of giving up, no matter how tough things got. She told me that she desperately needs the loan and that she knows that she will be able to pay back the money. She said that she planned on using the money to buy produce in bulk from the Arusha market and sell the fruits and vegetables for marked up prices in the Oltulelei Ward market. She believes that she will be successful because many people in Oltulelei cannot grow their own food and she will have no problem selling produce in the market.

Esther, the second lady spoken with, was twenty-eight years old and has recently lost her husband to AIDS. Esther also tests positive for HIV, but is still left to take care of her three children alone. She told Bradburn that she really wanted to receive a loan from WADEC, but she was concerned about the twenty percent interest rate. Hellen told Esther that she could bring up her concerns to the loan board and possibly get the interest rate reduced to ten percent. Esther said that she wants to use the loan money to buy more medicine and antibiotics for cattle. Esther has had six months of veterinary training and currently makes money treating cows and selling medicine to the Masai herdsman. Esther admitted that she is not certified or technically qualified to treat animals, but she is confident in her work.

Esther makes money by buying common livestock medicines, mostly antibiotics, for around five thousand Tanzanian Shillings and sells the medicine for six thousand five hundred Tanzanian Shillings, for a profit of a little more than a dollar per sale. She said that because there are a lot of Masai tribesmen who own cattle nearby, she has no problem selling the medicine. However, she is too poor to be able to purchase more than a couple of bottles, resulting in a very slow turn around rate that makes it impossible for her to make a living. To

make matters worse she is not healthy enough to find other work that is more physically demanding. Esther finished the interview by telling Bradburn that if she receives the loan she will pay it back at all costs.

Safi, the third woman interviewed, was thirty-eight with five children, and has already received one loan from WADEC and is applying for her second loan. She received one hundred thousand Tanzanian Shillings for her first loan and was now applying for a two hundred thousand Tanzanian Shilling (about \$160 USD) loan. Safi was very successful using her first loan to buy a milking goat and selling the milk as well as buying and selling vegetables on the side. She was able to make enough money to easily pay back the loan, plus interest. With the second loan, along with some money she saved up, she wants to buy a young Holstein cow and begin selling cow milk. Safi said that she is really depending on the loan because she hopes that she will be able to make enough money to send her middle child Sabrina to secondary school. Sabrina recently completed primary school with very high marks, at the age of twelve. Safi believes that Sabrina has the potential to do well in secondary school and she hopes that if she is able afford secondary school, Sabrina may likely go on to get a degree and will be able to take care of her when she gets old. Safi finished, by making the point that she did very well with the first loan and has shown that she is dependable and that she will not fail to do the same for the second loan.

After the application process is complete a committee, headed by Bradburn, is held and members of WADEC review each woman individually and decide whether to approve the loan. If a woman qualifies, a private meeting is set up with the woman to review and ensure that the woman fully understands the terms and conditions. WADEC requires that both the woman and

her husband, if she has one, sign the loan papers. Although many loan agencies do not require the husband to sign the loan, WADEC does not want problems to arise with women going behind their husbands back and receiving loans that may cause family disputes. WADEC feels that having both signatures promotes honesty and takes away the temptation for the woman to lie, which potentially causes personal safety risks for the woman.

Once the papers are signed the individuals will receive the loan in full within ten days of her acceptance. The women are encouraged to go to a free workshop that WADEC puts on. The workshop is designed to teach successful business practices, production techniques, as well as how to keep records of gains and losses in order to recognize profit. The women who are not accepted are personally counseled about why they were not accepted and weaknesses in their application. During the meeting the unaccepted loan applicants receive personal attention and advice about what they can do to develop a sound application and plan for running a successful small scale business. Many times business or production education is a relevant factor to a woman's ability to succeed.

Agriculture Education Resources Available for Women

As a result of primary and secondary education costing both money and time many women are forced to work from a very early age and therefore grow up with little formal of education. Parents often discourage or prevent their children from going to school because they utilize their child labor to generate income. A large portion of Tanzania's population depends on tourism and parents recognize the opportunity to make money from their children begging from tourists and as a result children are often discouraged from pursuing an education. Even though many women were too poor to attend school growing up or not given

the choice by their parents, women still carry the responsibility of being the primary provider in African culture.

Recognizing the lack of training within the female community many NGO's have expanded their organization to include a sector that is designed to quickly and efficiently train groups of women in both business and production techniques. It is vital that the training workshops are short, as most women cannot afford to go more than a couple of days without working. The two to three day workshops are usually free and open to any women that have the time and ambition to attend. Usually women that have been accepted to receive loans are required to attend a training workshop.

WADEC was used as an representative NGO in order to gain a view of agricultural related education resources available to women through NGO's. WADEC puts on a series of three different workshops specifically designed for women (See Figure 2 Page 38). The first workshop is not directly tied to agriculture and consists of a Voluntary Counseling and Testing program that focuses on women who want to be tested for HIV or need counseling as a result of already having contracted the deadly virus. The other more agriculturally oriented workshop topics focus on choosing a profitable business and teaches fundamental business concepts. The third workshop that WADEC offers, includes efficient and sustainable production techniques. As the last two workshops are relevant to this study, a broad overview of the business and production workshops will be explained in further detail.

Although the workshop emphasizing business choices and concepts, implemented by WADEC, is open to the public Helen notes that usually only women that are applying for micro loans or have already been accepted for a loan come to the workshop. The business training

workshop did not occur during the study period while with WADEC so it was not possible to attend the workshop thus Bradburn was relied on for information. As with all of WADEC's workshops the training is held approximately four times a year, once every three months. Fliers are made and posted in various villages to create awareness about the workshops. WADEC rents a building that serves as a classroom and training facility. Not only are the workshops free, but Bradburn provides transportation to women unable to afford the public dola dola, that live in distant villages, too far to walk.

The workshops start at eight in the morning and last approximately six hours, not including the hour break for lunch. Throughout the three days the women are taught basic business concepts using a variety of different teaching methods. Some of the concepts taught include supply and demand, income versus costs, value added ideas, recording methods. All of the lectures and manuals are written in Swahili, as all of the women speak little to no English. They try not to resort to having the women read manuals because many of the women are unable to read.

As a result of the lack of respect that women receive in Tanzanian culture, Bradburn said that many of the women feel inferior and helpless. This is why WADEC's workshops require a large amount of participation from the women, not only to instill the material being taught, but also to empower the women and build their confidence. Bradburn believes that women's empowerment is the main aspect that needs focus. As the women live in a patriarchal society many of the women have a very low self worth and as a result they believe they are not capable of being successful. Their low self esteem also results in their submissive nature that in turn supports the gender inequality present in their society.

A few of the techniques used by WADEC to get the women to participate include having the women come up with a basic business plan and presenting it to the class. WADEC also encourages the women to participate in debates that discuss the pros and cons of various business ideas and concepts. The women are also asked to come up with short plays or skits that teach or convey relevant material. During the last half hour of the training program the women all sing or chant songs that talk about women being strong independent individuals that can overcome anything.

The production training workshop is also three days and involves a classroom component as well as gives the women a chance to learn in the field. The same building that is used for the business workshop is rented for the production workshop. However, on the third day of the production workshop WADEC gets permission from a local seed distributor to use their research and production fields as a training facility for the women. Although the analyst was not able to attend the entire production workshop, there was an opportunity to spend a few hours in the classroom on June 18, 2009 and in the field at the seed distribution headquarters on June 19, 2009.

While sitting in on the workshop Bradburn translated a lot of what was being said in Swahili into English for the analyst. The women were being taught about inexpensive fertilization techniques, such as using manure from animals to fertilize their crops. As over using soil and depleting soils of essential nutrients is becoming a huge issue throughout Sub Sahara Africa, the workshop especially emphasized sustainable production practices such as crop rotation and erosion control. For the last two hours of the day the women were taught some basic nutritional concepts as well as practiced cooking various recipes for balanced meals

that will help insure that their families are well nourished. Similar to the business workshop the women ended the day with songs and dances emphasizing women's empowerment and courage.

The next day WADEC transported all twenty-five women in a single van, to a seed distribution plant, where they would have the chance to learn production techniques hands on in the field. Each of the women received a free packet that included some various seed species and some pocket sized handbooks that were written in Swahili and explained basic planting and growing procedures for the most popularly planted crops in Arusha. After a short briefing the women took to the fields.

WADEC understands that the majority of the women in the workshop cannot afford access to land for planting so the women are trained to plant certain native crops that can be planted in the hills of Mount Meru or Kilimanjaro. For instance, women that do not have access to actual plots of land can still plant single plants in small areas around where they live or on government owned land. Bradburn said that many of the locals are able to plant on government land even though it is illegal because they plant single plants in areas of high vegetation. As long as the land is not cultivated into plots the plants are not usually noticed by park officials.

This specific workshop focused on teaching the women to grow a native tomato that is able to grow in considerably harsh conditions. A packet of the tomato seeds were given to the women as part of the bag of materials they received. Throughout the day the women were instructed on proper techniques for planting the tomatoes. The seed distribution center does not mind the women learning and planting in their fields because at the end of the day the

women have planted and cultivated a small plot that can be used for research and observation. After spending the day learning to produce sustainably, the women have officially completed the three day workshop and receive a certificate of completion. Although these short workshops are not designed to make the women experts in business or production, they do introduce important fundamental concepts and most importantly give the women strength and a sense of self worth that is desperately needed within the female community.

FSR Resources Available to Women of Arusha

As previously stated, in general FSR organizations provide state of the art research that is specifically aimed at developing new seed and plant varieties as well as farming processes and solutions that are relevant to the country location of the organization. All of the research and innovations that are developed within the FSR institution are then implemented into the local population with the intention of creating a more modern and sustainable approach to an otherwise traditional farming community. As FSR headquarters are focused on helping the surrounding community there are opportunities for women to utilize resources that are provided by these organizations.

The headquarters for FSR (Arusha) is called the Selian Agriculture Research Institute (SARI) and is responsible for what is known as Tanzania's Northern Zone Agriculture. SARI was founded and funded by the Sustainable Technology Institute of Germany. SARI consists of several departments that range from various varieties of plant based research, farming systems and irrigation studies, as well as social economic studies. The Tanzanian institution is staffed by over 80 PhD and Masters holders who conduct research and innovate procedures that relate to small plot farming. A few examples of the departments located within SARI include specific

commodity departments, such as a maize department, bean department and rice department. Other departments include the farming systems department which focuses on integrating technology and research into the community.

In order to gain a better understanding of the institution and what resources are available for the women of Arusha, an informal group interview of two Tanzanian researchers that work for SARI was conducted, including Lyamchai (a Principal Agricultural Research Officer PARO) for SARI with a Masters of Science in Agro meteorology (See Figure 3 Page 38). The second interviewee is Ms. Mmbaga, also a PARO for SARI with a Masters in Management of Natural Resources (see figure in Appendix 1).

Lyamchai and Mmbaga work in the SARI Natural Resources Department, which focuses on issues dealing with soil properties, soil fertility, agro forestry, and conservation agriculture (CA). The two are currently working on a project called the “Land Care Program” that has been going on for two years now. The first year consisted of conducting research on successful village reforms that have taken place and are helping villages in the transition from traditional farming practices into more modern sustainable practices. The two researchers are using a village in Kenya that has already been successful in modernizing their agriculture practices, as a model for future reforms in Tanzania.

Although Lyamchai and Mmbaga were not directly associated with offering services and agricultural education to women of Arusha they are well informed about the resources provided to women by SARI, as well as the procedures that women must go through in order to utilize these resources. Lyamchai repeated the notion that each individual village has a Chiefs acts as a village leader. The Chief is an important figure and must be consulted before SARI

speaks to any one person or group within the village. In turn, if a woman has a problem or wants assistance from SARI she must first talk to the Chief of the village and he will set up a meeting with SARI. Whether SARI goes to a village or the village comes to them, SARI has an abundance of resources that are specifically designed to assist women.

For instance, if a woman is having problems finding a middleman to buy and sell bulk goods from, SARI has connections to a number of wholesale buyers and sellers. Similarly, if the woman is having an issue entering a market or being successful selling goods, SARI will inform the woman of market locations and opportunities that they believe have the potential for the woman to be successful in. Often times connecting people together is an efficient and simple way that SARI is able to help numerous people at once.

SARI also offers group classes that consist of 30-60 people who are interested in learning more about sustainable agriculture practices. Conservation and sustainability are two major concepts that SARI focuses on. Similar to WADEC, SARI gives women the opportunity to learn modern and efficient farming techniques through hands on experience. These groups meet several times a month and sometimes learn by working on projects or current research that SARI has going on at the time. Depending on the woman's need and location, SARI may outsource to other NGO's or organizations that are close to where the woman lives or specializes in the area for which a woman is interested or needs assistance.



Figure 1 Photo of a small plot farm



Figure 2 Women graduating from three day agricultural training program



Figure 3 Left: Bradburn Middle: Lyamchai
Left: Mmbaga



Figure 3 Photo of a Village Market

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMENDATIONS

Summary

Women have a variety of different resources that are available for them to utilize. Which resources will benefit a woman most, depends on each individual woman's situation. It was discovered that if a woman is fortunate enough to have access to land she has the potential of gaining the most profit because she grows the crucial source and can be vertically integrated, as both the producer and seller. However, the majority of women living in Arusha are not fortunate enough to own land and must resort to buying produce in bulk and adding value to the product by transferring the product to another market and selling it at marked up prices.

In many instances the women simply do not have the resources or starting capital to make a livelihood. In such cases it is vital that the women receive some form of outside help. This study explored the two largest forms of outside help available to woman, both NGO's and FSR facilities. Various NGO's offer both classroom education workshops as well as hands on education in the field. NGO's also offer micro loans to women, which gives women who normally could not afford to start a business, the startup capital to begin generating an income. Similar to NGO's, FSR institutions such as SARI that was researched in this study, offer various educational resources and work to implement modern research and technology into traditional communities such that is found in Arusha.

Conclusions

Unfortunately, even with the numerous resources and institutions that are designed to help women and society, Arusha and its citizens continue to struggle and fail to gain a foothold on the ladder that leads to continued development. Instead, in many ways times become tougher as the environment and land is depreciated and exhausted due to unsustainable farming practices. African women, living in places like Arusha, especially feel the stress of hard times because they are forced to deal with the harsh consequences of living in a traditional culture where males dominate society and place most responsibilities on the shoulders of women.

Laws and regulations are paramount for changing social injustices and lack of sustainable procedures taking place in areas like Arusha. However, the lack of imposed laws and regulations make it nearly impossible for conservation and humanity legislature to be upheld within the community. Lack of environmental concern is causing decreasing yields in an area that has an increasing population over 3% annually. Lack of work ethic is another huge issue that organizations like SARI have been researching and dealing with for years. The local communities' lack of drive and tendency to be satisfied when they obtain just enough to live keeps the economy from progressing and flourishing. People like Bradburn, Lyamchai and Mmbaga understand the importance of empowering people in the local community, so that they can solve their own problems and provide for themselves rather depend on handouts from the government or foreign aid. The single biggest factor affecting the community and more specifically women is poverty. Poverty remains the largest underlying factor responsible for the problems that populations living in African countries, such as Tanzania, face. The more

understanding and awareness that is created about the desperate situation that many women living in African countries find themselves in, the more potential there is for further development of resources to aid women and empower those born into a world of endless problems and hardships.

Recommendations

It is recommended that anyone who wishes to donate funding to help aid Arusha, consider donating to NGOs. Donating to an NGO helps insure that the money is used in an efficient manner that makes a lasting impression on the community, rather than used as a handout that can actually be detrimental to society and only a short term fix. If a person is unsure of which NGO to donate to it is recommended that the individual donates to an NGO like The Arusha Project, which takes the funds that it raises and distributes them to other NGOs through the form of a grant. In this case The Arusha Project encourages local NGOs throughout the community to apply for grants that range from \$500 USD to \$5000 USD. NGOs like The Arusha Project go review grant proposals and form relationships with other NGOs in order to decide how to allocate the donated money in a way that benefits the local community most.

Further Research

It is recommended that further research is conducted about the demographics of Arusha. There is a need for better understanding of the differences between the six districts that make up Arusha. Further research of the topography that resides in each district, as well as the unique population attributes of the people that reside in each district. A better understanding of each district's individual issues would allow for the formation of solutions that

are less broad and more efficient, as solutions are tailored specifically to the variables of the problem.

Further research, documenting the dynamics and functions of all of the NGOs residing within the Arusha region is also recommended. Better documentation of all of the NGOs in Arusha would create more awareness of opportunities that the local population has to utilize. Mapping the location and function of Arusha NGOs creates the potential for a better understanding of the aid being offered and exactly where it is being offered. Data collected about the specific function and location of every NGO within Arusha could be analyzed in a fashion that reveals the weaknesses and strengths of the aid being offered, so that it becomes clear what there is a greatest need for.

References Cited

- Bradburn, Helen. 2009. Executive Coordinator, Women Agriculture Development and Environmental Conservation NGO. Personal Interview, Arusha, Tanzania. (July 15).
- Collinson, Mike. 1999. *A History of Farming Systems Research*. Food and Agriculture Organization of the United Nations. Wallingford: CABI Publishing. 200-250
- Cornelia, Flora. 1984. "Farming Systems Research and Extension: Implementation and Monitoring." Institute for Agricultural Research. Paper No. 8, pp 12.
- "Current Status of HIV and AIDS." 2009. Tanzania Commission for AIDS. <http://www.tac aids.go.tz/> web January 2009. May 15, 2009.
- Delgado C. L and N.W. Minot. 2000. "Agriculture in Tanzania Since 1986." Washington D.C.: World Bank. (September)36-52.
- Dixon, Ruth.1982. "Women in Agriculture: Counting the Labor Force in Developing Countries." *Population Council*.(8:3) September, pp. 539-566
- Esu-Williams, Eka. 2000. "Gender and HIV/AIDS in Africa-Our Hope Lies in the Future" *Journal of Health Communication*.Vol. 5 (September):123-126.
- Feldstein, Hilary. and Janice, Jiggins. 1994. Tools for The Field: Methodologies Handbook for Gender Analysis in Agriculture. Hartford: Kumarian Press, Inc. 9-48.
- Harwood, Richard. 1979. "Small Farm Development." Boulder: Westview Press Inc. pp 12
- Hutchinson, Nick. 2009. Founder, Arusha Project. Personal Interview, Arusha, Tanzania. (July 19)
- Johnston, Bruce and John Mellor. 1981. "The Role of Agriculture in Economic Development" [*The American Economic Review*](#), (51:4) September, pp. 566-593.
- Jorgenson. Danny. 1989. "Participant Observation: A Methodology for Human Studies." Thousand Oaks: Sage Publishing Inc. pp. 3-35

Lyamchai, Charles J. 2009. Principle Agricultural Research Officer, Selian Agricultural Research Institute, Personal Interview, Arusha, Tanzania. (August 12-August 15).

Mmbaga, Tuali E. 2009. Principal Agricultural Research Officer, Selian Agricultural Research Institute, Personal Interview, Arusha Tanzania. (August 12-August 15).

Quigley, Maria. Katua, Munguti. Heiner, Grosskurth. James, Todd. Frank, Mosha. Kesheni, Senkoro. James, Newell. Philippe Mayaud. Gina, ka-Gina. Arnoud, Klokke. David Mabey. Awena, Gavyole. Richard, Hayes. 1996. "Sexual Behavior Patterns and Other Risk Factors for HIV Infection in Rural Tanzania: A Case-Control Study." Lippincott: Rapid Science Publishers. pp. 1

Sender, John and Sheila Smith 2007. "Poverty, Class, and Gender in Rural Africa: A Tanzanian Case Study." New York: Routledge Publishing. pp 62-74

Zhihong, Sa. and Ulla Larson. 2008. "Gender Inequality Increases Women's Risk of HIV Infection in Moshi, Tanzania." *J.Biosoc. Sci.* 40. (2008): 505-525.

"2008 Report on Global AIDS Epidemic." 2008. UNAIDS. International Aids Conference. Mexico City, Mexico.